

ABSTRACT OF THE DISCLOSURE

A longitudinally coupled multi-mode piezoelectric filter is constructed to use a piezoelectric stiffened effect. The piezoelectric filter includes a multilayer piezoelectric element having at least four excitation electrodes arranged substantially parallel to one another and a plurality of piezoelectric layers which are arranged between the excitation electrodes and which are polarized in a predetermined direction. The piezoelectric filter further includes an input electrode, an output electrode, and a ground electrode. Application of an input signal between the input electrode and the ground electrode causes vibration of different order modes to be excited and coupled, such that an output signal is extracted between the output electrode and the ground electrode.